

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

- 1 1. (Withdrawn) A method for detecting molecules, the method comprising:
2 a) determining the electronic status of a semi-conductor;
3 b) establishing electronic communication between the molecules and
4 the semiconductor;
5 c) subjecting the semi-conductor to energy influx;
6 d) redetermining the electronic status of the semi-conductor.

Claims 2-27 (Canceled)

1 28. (Currently Amended) A method for manipulating biological material in vivo,
2 the method comprising:

- 3 a) covalently attaching a semi-conductor to a first biological moiety via a
4 charge transfer intermediary to create a construct;
5 b) inserting the construct into a living organism;
6 c) allowing the construct to migrate to the biological material;
7 d) creating a plurality of charges on the construct, wherein the size of the
8 charges and distances between the charges cause the biological material
9 to change in structure.

1 29. (Original) The method as recited in claim 28 wherein the biological mate
2 rial comprises molecules selected from the group consisting of nucleotides, nitrogenous
3 heterocyclic bases, amino acids, and combinations thereof.

1 30. (Original) The method as recited in claim 28 wherein the charges are

2 created by subjecting the construct to radiation.

1 31. (Currently Amended) The method as recited in claim 30 wherein the
2 radiation has an energy greater than of approximately 1.6 eV.

1 32. (Currently Amended) The method as recited in claim 28 wherein the
2 radiation has energy ranging from about 1.6 eV to to 3.2 eV.

1 33. (Original) The method as recited in claim 28 wherein the step of creating a
2 plurality of charges further comprises subjecting the construct to radiation selected from
3 the group consisting of white light, ultra violet light, X-rays or gamma rays, alpha rays,
4 gamma rays, and combinations thereof.

1 34. (Original) The method as recited in claim 28 wherein the biological mate
2 rial is nucleic acid and the construct changes the nucleic acid by cleaving it.

1 35. (Original) The method as recited in claim 34 wherein the cleavage occurs
2 when the semiconductor accumulates electrons from the first biological moiety.

1 35. (Currently Amended) The method as recited in claim 28 wherein the
2 semiconductor is a metal oxide selected from the group consisting of TiO₂, ZrO₂, VO₂,
3 MnO₂, NiO, ZnO, CuO, Fe₃O₄ and combinations thereof.

1 36. (Withdrawn) The method as recited in 1 wherein the biological molecule
2 is nucleic acid having base sequences interspersed with guanine.

1 37. (Withdrawn) The method as recited in claim 30 wherein the source of
2 radiation is a radioactive isotope selected from the group consisting of phosphorus-32,

3 iodine- 123, iodine-131, sulfur-35, selenium-75, technetium-99, yttrium-90 and combina-
4 tions thereof.

1 39. (Withdrawn) The method as recited in claim 37 wherein the radioactive
2 isotope is covalently attached to the semi-conductor.

1 40. (Withdrawn) The method as recited in claim 40 wherein the source of the
2 radiation is phosphorus-32.

3 41. (New) The method as recited in claim 30 wherein the radiation is
4 approximately 2 eV